

RAND McNALLY

Interest: Author of Major Trading Area and Basic Trading Area divisions.

Service Areas:

- Proposes terms under which Rand McNally MTA and BTA listings may be used by the FCC and individual licensees. (2)

RURAL CELLULAR ASSOCIATION

Interest: Association of small rural cellular operators.

Service Areas:

- The FCC's rules should clarify that PCS licensees will have the ability to partition their markets and assign their rights to third parties to ensure service to rural America and participation of rural telcos. (7-8)

Cellular Eligibility:

- Rural telcos should be exempt from the cellular attribution rules in order to ensure the availability of PCS in rural areas. (3-6)

Performance Requirements:

- Licensees should be required to relinquish their rights to serve any portion of their licensed markets which are unserved at the end of the seventh year of the license period. (6-7)

SOUTHWESTERN BELL CORPORATION

Interest: Regional Bell Operating Company.

Performance Requirements:

- Seeks limited reconsideration of the FCC's imposition of the same build-out requirements for the 10 MHz spectrum blocks as those imposed on the larger spectrum blocks. SWB believes that imposition of stringent construction requirements on individual, non-aggregated 10 MHz blocks will stifle cost-effective use of spectrum, especially for wireless local loop service. (1)
- Liberalizing the construction requirements for the 10 MHz PCS licenses will make the FCC's decision more consistent with the objective of balancing universality, speed of deployment, diversity of services and competitive delivery. (2)
- 10 MHz PCS licensees will not be able to provide the same scope of services or economies as licensees that hold larger blocks of spectrum. Accordingly, it is likely that the 10 MHz bands will be used for niche-type applications, such as wireless metropolitan area networks (MANs), wireless local loop service, and wireless Centrex/PBX rather than in competition with wide area services and the 20 and 30 MHz PCS licensees. Thus, imposition of the same constructions requirements on these licensees will result in higher service costs, discouraging potential innovative applications. (3)
- SWB believes that 10 MHz blocks are viable for wireless local loops, but projects that local loops will be cost-effective only if used for new growth access lines and for outside plant rehabilitation projects. Access line growth in SWB's operating territory is expected to average only 2 to 3 percent per year in the near term. Deployment will thus fall short of the construction requirements. This in turn will eliminate use of the most cost-effective technology available for certain local loop installations. (4-5)
- SWB recommends adoption of a target of 25 percent population coverage, to be achieved within 10 years, for all nonaggregated 10 MHz licenses, in lieu of the 90 percent population coverage currently imposed. This will achieve the speedy deployment the FCC desires while encouraging diversity of services by enabling the use of niche applications such as wireless local loops. (6)
- Because the PCS Order creates the potential for multiple wireless service providers in every market (two existing cellular carriers, up to seven new PCS licensees, and ESMR providers), a relaxation of the build-out requirements for 10 MHz PCS licenses will lead to a broader variety of services, a larger number of viable participants and increased participation by small businesses. (5-6)

SPRINT CORPORATION

Interest: Interexchange, local exchange and cellular service provider.

Cellular Eligibility:

- Cellular carrier eligibility restrictions (*i.e.*, the 10 percent overlap limitation) must be modified to reduce the inequitable negative impact upon geographically dispersed cellular providers that mainly serve smaller markets and lack market power. (2-7)
 - ▶ Under the current rules, Sprint and TDS would be excluded from many more MTA markets than any of the BOCs. (4)
 - ▶ Suggests allowing a 20 percent POP/PCS overlap. This would increase the opportunities for the geographically dispersed carriers, while not appreciably affecting the opportunities of geographically concentrated carriers. (5-7)
- Entities with noncontrolling interests in cellular licensees should be eligible for PCS licenses, as they have no ability to exert market power. (7-12)
- a 20 percent POP PCS overlap limitation (*i.e.*, eligibility so long as ownership interest X POPs in overlap area less than 20 percent of POPs in PCS market) would not unduly penalize entities holding noncontrolling interests. (11-12)
- The FCC should clarify whether (and how) cellular company ownership of other companies that hold PCS licenses is attributable to the cellular company (*e.g.*, Asks whether a cellular company may hold a 25 percent ownership interest in a company that has a 20 percent interest in a PCS consortium, even if the cellular company owns 100 percent of cellular systems in that PCS market?). (12-13)

Ownership Limits:

- ESMR providers should be subject to the same eligibility rules as cellular, because these services are fully competitive. (13)

Power Limits:

- The FCC should modify the maximum PCS base station power to 1600 watts EIRP. Such a modification will facilitate lower cost construction, assist in the deployment of newer technology service, and not harm existing microwave users. (14-15)

Performance Requirements:

- In cases where cellular carriers gain PCS licenses and offer PCS-like services over their cellular spectrum in the same market, such entities should be allowed to count cellular POPs coverage toward their PCS build-out requirements. (13-14)

**TELECOMMUNICATIONS INDUSTRY ASSOCIATION
FIXED POINT-TO-POINT COMMUNICATION SECTION
NETWORK EQUIPMENT DIVISION**

Interest: Trade association and standards setting body comprised of equipment manufacturers.

Interference Standards:

- The FCC must specify that accredited industry procedures for calculating PCS signal levels at fixed microwave receivers have the same status as the procedures set forth in Appendix D of the Commission's Order. In addition, the FCC should encourage all affected parties to use a single accredited industry standard, such as TIA's Bulletin 10-F when it is adopted, in lieu of Appendix D. (2)
- The FCC's Order contains ambiguities in specifying the PCS-microwave interference methodologies including whether all calculations must be made using a Longley-Rice propagation model. (7,8)
- TIA's Bulletin 10-F will be adopted early in 1994 and will likely be the industry standard for determining PCS-microwave interference. (9)
- To the extent that PCS operators will need to initially rely upon the procedures in Appendix D for calculating interference to microwave stations, certain improvements are needed. The improvements revolve primarily around the FCC's melding of a Longley-Rice propagation model, using urban correction factors, with various other factors that TIA had drafted for a different model. The proposed modifications are shown in the attached appendix. (10,11)

**TELECOMMUNICATIONS INDUSTRY ASSOCIATION
MOBILE AND PERSONAL COMMUNICATIONS DIVISION**

Interest: Trade association and standards setting body comprised of equipment manufacturers.

CAI Standards:

- The Commission should require that all equipment type-accepted for licensed PCS operation in the 1.8-2.2 GHz band meet standards developed by an ANSI accredited standards body. The lack of a common air interface standard will likely deny PCS customers the ability to roam from system to system with the same handset. (3)

TELEPHONE & DATA SYSTEMS, INC.

Interest: Telecommunications company providing local exchange telephone, cellular and paging services.

Band Plan:

- In the event open eligibility is adopted, the FCC should rechannelize the lower and upper PCS bands into six 20 MHz blocks; uniform blocks would avoid the unfairness of the current plan. (2)

Cellular Eligibility:

- Open eligibility for all applicants is supported by the record. (2-3)
- In the event cellular eligibility restrictions are maintained, the rules should be amended to specify that any entity may have an ownership interest of up to 15 percent (instead of 5 percent) in a licensee holding a nationwide license. This would allow a cellular carrier to meaningfully participate in a nationwide PCS licensee yet still have its interest limited. (3)
- If all or substantially all of the cellular eligibility restrictions are retained, rural telephone companies should be excluded from these restrictions. (4-9)
 - ▶ The FCC's policy concern should be the promotion of the earliest possible deployment in rural areas; rural telephone companies are the most likely to do this. (4-5)
 - ▶ A 10 MHz block of spectrum is not sufficient to meet the PCS needs of rural areas. Most independent LECs cannot supplement this spectrum with cellular spectrum as they do not control or operate cellular systems in their landline service areas, but rather have only a minority interest. For those who do have a majority interest, cellular capacity limits will severely restrict the use of this spectrum for PCS services. (5-7)
 - ▶ Open eligibility for rural telephone companies is supported by Congressional findings underlying the Budget legislation. (7-9)

TELOCATOR

Interest: Trade association of PCS interests.

Service Areas:

- The FCC should replace its reliance on the Rand-McNally defined MTAs and BTAs with service areas that simply list the counties contained in each BTA and the BTAs contained in each MTA. (16)

Power Limits:

- The FCC should raise the permitted power for PCS base stations from 62 to 1000 watts ERP. This change would allow more economic coverage of sparsely populated areas; remove an unintentional power penalty on CDMA and TDMA devices; allow the use of smart antennas; and, be consistent with the 800 MHz cellular rules. (2-7)
- The maximum permitted power for PCS mobile units that do not transmit within the near proximity of the human body should be increased to 12 watts ERP. (7-9)

Interference Standards:

- The adjacent channel emission limitations should apply equally to emissions falling within and beyond the allocated PCS spectrum. (9,10)
- The PCS/microwave coordination rules should envision future revisions to TSB10 with particular regard to the model used to calculate potential interference. (11)

Application Filing Requirements:

- In conjunction with the auction proceeding, the FCC should clarify the application filing requirements, adopt streamlined procedures that do not require the submission of engineering material prior to construction, and allow electronic filing. (14,15)
- Requiring PCS applicants to verify the location of antenna sites to ± 5 meters (§99.53(e)) is excessively burdensome without concomitant benefit. (15)

RF Exposure:

- Only hand-held PCS transmitters should be required to automatically comply with the RF exposure standards for the uncontrolled environment; other transmitters (*e.g.*, base stations), should be able to comply with the standards for controlled environments where appropriate. (18,19)

TEXAS ADVISORY COMMISSION ON EMERGENCY COMMUNICATIONS
(Petition and Supplement)

Interest: State agency responsible for administering E-911 service. States of California, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New Mexico, South Dakota, Washington, Vermont and Oregon concur in petition.

Other:

- Requests that the Commission adopt rules that condition issuance of a PCS license on the provision of calling party location information to E-911 systems in a usable format. (3-5)
- Requests that the FCC require that a uniform standard for delivery of calling party location information be established. Public safety organizations are already preparing such a standard. (5-6)
- Alternatively, the FCC should immediately initiate a rulemaking to resolve E-911 issues for PCS and other wireless services. (7)

TIME WARNER TELECOMMUNICATIONS

Interest: Leader in media, information, entertainment, magazine publishing, television series productions, records, books and cable television.

Band Plan:

- The Commission should assign 40 MHz of spectrum per licensee. Dividing spectrum into 10, 20 and 20 MHz blocks defeats the goal of giving licensees the ability to competitively offer a wide range of services and devices. (4)
 - ▶ Concerned with the 10 MHz assignment plan, and stresses Commissioner Barrett's statement that the record is devoid of evidence concerning the technical feasibility of 10 MHz assignments above 2 GHz. (4, note 9)
 - ▶ 40 MHz is the minimum quantity of spectrum required if PCS providers must share with fixed microwave incumbents. (5-6)
- The FCC's allocation scheme reflects that smaller and variable sized PCS assignments will promote "niche" services, which will result in a non-competitive environment in which PCS providers will never be full-fledged competitors among themselves or vis-a-vis other providers because they will lack the necessary diversity. In contrast, by granting 40 MHz spectrum blocks, PCS licensees will be compelled to offer a broad array of services as a means of differentiating their services and products from those of their competitors. (7-8)
- Aggregating spectrum is insufficient because it imposes substantial costs and will delay the introduction of service.
 - ▶ Specifically, assembling spectrum blocks of 40 MHz through post-auction aggregation will impose major transactional costs, increasing consumer rates. Aggregation will likely cause significant delays in the provision of service because a minimum of 40 MHz is necessary in many areas to coordinate PCS systems around existing microwave operations. (8-9)
 - ▶ The FCC has effectively undermined permissive aggregation by its choice of disparate frequency separations among the spectrum blocks. The required use of 80 MHz frequency separation for the 30 MHz blocks A and B, and the set-aside 20 MHz block C makes it technically difficult and costly to couple any of these blocks with the set-aside 10 MHz block and the other three 10 MHz blocks which are required to maintain 50 MHz separation. (9-10)

- If the FCC declines to modify its rules to directly license 40 MHz of spectrum to each PCS provider, licensees in the lower bands should be permitted to lease, enter into joint ventures or consortia, or otherwise utilize portions of the spectrum licensed to others in the same band. (10-11)

Power Limits:

- The antenna height and power limitations are unduly restrictive. TWT agrees with Bell Atlantic's recommendation that maximum power and antenna heights for PCS be set no higher than those established for cellular. In addition, TWT agrees with APC that no limitations are necessary where service extensions into adjacent markets are appropriately restricted and proper coordination distances are maintained. (13)

TRW INC.

Interest: Applicant in the Mobile Satellite and Radio-Determination Satellite services.

Band Plan:

- Strongly urges the FCC to revisit its decision to allocate the 2180-2200 MHz spectrum for terrestrial PCS rather than MSS. (1)
- Placing terrestrial PCS in 2180-2200 MHz would occupy two-thirds of the global MSS downlink band at 2170-2200 MHz band and effectively preclude global MSS use of the companion uplink at 1990-2010 MHz. (6)
- The PCS allocation is impossible to reconcile with the strong U.S. effort to allocate 2 GHz spectrum for global MSS at WARC-92. The FCC's action sends a muddled message to other ITU member nations. (7,10)

U.S. INTELCO NETWORKS, INC.

Interest: Owned by 282 Independent Telephone Companies; provides customer database services, calling card billing validation services, revenue administration, and other database services to over 1000 Independents nationwide. Wants to ensure deployment of PCS services throughout rural areas. (1-2)

Band Plan:

- Channel Block C should be reserved for rural telephone companies to ensure rapid deployment of services to rural areas. In the alternative, the Commission should require Channel Block C licensees to allow rural telephone company participation for areas including rural telephone companies partitioning their territory and permitting the rural telephone company to provide PCS services within its telephone service area. The rural telephone company would be required to reimburse the successful Channel Block C bidder for the proportionate amount of the winning bid based upon the percentage of total population in the licensed area. (4-6)
- The FCC should allow, or at least not preclude, the voluntary partitioning of markets to enable rural telephone companies to serve their telephone service areas. This would enable rural telephone companies to immediately initiate the construction and operation of PCS services in rural areas which would otherwise have to await build-out requirements. These rural areas may never receive services from other licensees if they are able to satisfy the 90 percent service standard by concentrating on more densely populated areas. (7-8)

Cellular Eligibility:

- Since there will be between 3 and 7 PCS licensees in any area, there will be significant competition. Therefore, cellular interests should not preclude rural telephone companies from participating in the provision of PCS. Such an entry barrier is arbitrary and superfluous. (8-9)

U S WEST, INC.

Interest: Regional Bell Operating Company.

Cellular Eligibility:

- Any cellular eligibility restrictions should also apply to equivalent services -- including ESMR services -- because the considerations underlying the cellular eligibility restriction apply with equal force to ESMR operators. (16-22)
- The FCC should clarify certain aspects of the cellular eligibility restrictions. (26-29)
 - ▶ Cellular entities restricted to a 10 MHz BTA block in a particular area should be allowed also to hold interests of less than 5 percent in other PCS licenses in that market. (26-28)
 - ▶ Asks whether a cellular entity serving 10 percent or more of the population of a particular BTA would be ineligible to apply for a 20 or 30 MHz MTA block for the MTA in which that BTA is contained? (28-29)

Power Limits:

- The FCC should increase the maximum PCS base station power limits to 1600 watts EIRP. (2-16)
 - ▶ The derivation of the 100 watt power limit is inadequately explained. (4-6)
 - ▶ The 100 watt limit will constrain PCS licensees from competing effectively with cellular and SMR carriers, especially since the radius of a PCS cell is inherently smaller than a cellular/SMR cell. (7-10)
 - ▶ The 100 watt limit makes provision of PCS to non-metropolitan areas unnecessarily expensive, especially since PCS licensees are required to serve more of their service area than cellular carriers. (10-12)
 - ▶ The 100 watt limit will also foreclose PCS licensees from taking full advantage of high-gain sector antennas and newly-developed intelligent antenna arrays. (12-13)

Application Filing Requirements:

- Certain filing and technical rules for PCS contain errors, inconsistencies, or omissions that should be corrected. (22-26)

- ▶ Section 99.12 should cross-reference section 99.204, not 99.230(c). (23)
- ▶ Section 99.16 fails to include any reference to a dispositive renewal preference (thereby obviating the need for a comparative hearing). (23-24)
- ▶ The Part 22 rules proposed for PCS in the competitive bidding proceeding include numerous rule sections which are not necessary under an auction process or inconsistent with the rules for PCS. Similarly, several Part 22 rules that should apply to PCS are omitted from the Part 99 rules. (25)
- ▶ A provision similar to Section 22.914 regarding cellular resale should be adopted for PCS. (25-26)

UTILITIES TELECOMMUNICATIONS COUNCIL

Interest: Organization whose members operate private microwave systems in band affected by the Order. (2-3)

Band Plan:

- Some of the spectrum in the PCS allocation should be allocated for private and internal use by public safety entities and core industries with a need for advanced mobile communications. These entities will not be able to purchase their communications needs from licensees because the areas defined by the FCC do not cover the areas needed by the entity and there is no set standard for each area. (3-5)
- The rules and allocation decisions, such as the frequency bandwidths, coverage requirements, and service areas, preclude the development of private emerging technologies. (5-8)

Service Areas:

- Recommends that the FCC adopt its own definitions of PCS licensing areas, based on independent analysis, and publish these definitions in the Rules to avoid any copy infringement problems with Rand McNally. (20-21)

Interference Standards:

- The FCC should require a prior coordination procedure (as in Section 21.100) which provides for prior written notice of PCS deployment. (17-18)

Application Filing Requirements:

- The FCC should revise Section 99.11 to clarify that although PCS licensees will be granted "blanket" licenses for each market and frequency block, separate applications and authorizations will be required for each base station and related facilities. (16-17)

Other:

- The FCC should clarify the status of experimental PCS systems and require such systems to comply with the coordination and certification requirements adopted. (19)
- Section 94.61(b), note 2, should be revised to indicate that frequencies in the 1850-1970, 2130-2150, and 2180-2200 MHz band are also available under Part 99. Similar revisions may also be appropriate in Section 94.63, microwave interference standards, to cross-reference the standards used to calculate PCS-to-microwave interference. (19)



APPLE COMPUTER, INC.

Interest: Computer manufacturer and Data-PCS proponent.

Band Plan:

- References its proposal to dedicate the 1910-1930 MHz band for Data-PCS pending in the Apple Emergency Petition. (3)
- The Commission should make the asynchronous band contiguous, since dividing the 20 MHz into two 10 MHz sub-bands restricts the amount and utility of the spectrum for broadband data. (7-8)

Channelization and Access Rules: Uniform channel access rules should apply to both isochronous sub-bands. (9-10)

Role of UTAM: Because the designation of UTAM is contingent upon submission of an acceptable funding and band clearing plan, the rules should clarify that UTAM's designation is conditional and specific references to UTAM in rules should be eliminated. (3-4)

Packing Rule: Requests elimination of the "packing" rules in Section 15.321(b) and 15.323(b) to allow guardbands as one potential solution to adjacent channel interference. (5-6)

Emissions Limits: Requests reducing the Section 15.323(d) emission limits by 10 dB, since the limits are more stringent than requested by WINForum; they do not provide added protection to adjacent microwave systems, which are treated as co-channel in any event; filtering to meet the band limits is expensive; and, the limits will degrade data rates. (6-7)

Channel Monitoring Rules: The ± 3 dB monitoring measurement range imposed by Section 15.323(c)(6) should be increased to ± 6 dB and a narrow environmental range for testing should be specified; the current range is impractical with minimal benefits. (7)

Cooperating Devices: The Commission should revise the restrictions in Section 15.321(c)(5), since it is unenforceable, to prohibit more broadly any cooperating devices from precluding fair access by non-cooperating devices. (8-9)

Conditional Authorization: Suggests that the Commission, while appropriately delaying equipment authorization until eligibility for deployment is ensured, should nonetheless create a conditional approval process. (9)

Labelling Requirements: The Commission should provide for the termination of the Section 15.311 labelling requirement when coordination is no longer necessary. (10)

AT&T

Interest: Interexchange carrier and equipment manufacturer.

Measurement and Certification Procedures: The Order fails to provide sufficient guidance in a number of areas regarding measurement and certification procedures; AT&T has attached an "Analysis of Etiquette Testing Issues" that should be incorporated into the rules to ensure that the measurement procedures for certification are used as intended by WINForum, which represents the industry consensus. (2-5, Appendix A)

- For example, the FCC should clarify how it will address the potential for licensed PCS/unlicensed PCS interference--AT&T suggests requiring protecting unlicensed PCS by including unlicensed PCS in Section 15.209 and clarifying that the total PCS power emission permitted to leak from either band should not exceed that which the prospective unlicensed users have already self-imposed on their use of unlicensed devices. (5-6)
- The AT&T/NCR exhibit suggests clarification of aspects of the operational rules including definition of permissible power; use of channel control signaling, definition of transmission frames; and ability to use duplex devices. (6, Appendix A)

No Radio Common Carrier Use of Band: The FCC should clarify that the unlicensed band is not available for Radio Common Carrier services, since the intent was to reserve the band for end-user deployed equipment, common carrier spectrum should be auctioned, common carrier uses would be inconsistent with the incumbent relocation plan, and common carrier use of the band would congest the band and upset the delicate balance the Commission has created for fair and efficient use. (6-11)

ERICSSON CORPORATION

Interest: Equipment manufacturer.

Channelization and Access Rules:

- The channelization rules in Sections 15.321(a), (c)(5) and (d) should avoid "trapping" wideband devices near the band edge and forcing technical inefficiencies by: (1) removing the fixed segmentation requirements in both isochronous sub-bands; (2) adding a rule requiring devices to occupy no more than 50 percent of the bandwidth in each 10 MHz isochronous sub-band; and (3) changing the first adjacent channel emission level from 40 dB to 30 dB. (A5-A9)
- The access rules for the isochronous sub-bands should allow equal use of both sub-bands, since the higher sub-band has significantly more microwave links (and is adjacent to the other microwave bands) and will take commensurately longer to clear. (A10-A11)

Duplex Devices: Section 15.321(c)(1) should be revised to allow duplex devices to respond in the same frequency/time window cleared by the base station. (A1-A2)

Packing Rule: The "packing" rules (Sections 15.321(b) and (c)(5)) should be revised to eliminate problems with starting open channel searches in the band edges where interference is likely; rather, to ensure spectrum efficiency and maximize potential for reliable initializations, devices with an emissions bandwidth ≤ 2.5 MHz should start searching 3 ± 1 MHz from the licensed PCS band edge and search upwards and devices with an emissions bandwidth ≥ 2.5 MHz should start searching 3 ± 1 MHz from the licensed PCS band edge and search downwards. (A3-A4)

Cooperating Devices: The rules should limit "cooperating" devices within 1 m of each other to no more than 50 percent of each 10 MHz isochronous sub-band during a 10 ms frame period. (A4-A5).

Measurement and Certification Procedures: Stability requirements in Section 15.321(f) (± 10 ppm over -30°C to $+50^{\circ}\text{C}$) are unrealistic and should be relaxed to ± 10 ppm at stabilized temperature extremes from $+10^{\circ}\text{C}$ to $+40^{\circ}\text{C}$. (A9-A10).

Channel Monitoring Rules:

- The monitoring bandwidth specified in Section 15.321(c)(7) is currently difficult to comply with and should be revised to allow monitoring of 80 percent of the transmitter bandwidth. (A12)

- The monitoring accuracy of ± 3 dB in Section 15.321(c)(8) is impossible in a commercial product; instead, the power measurement method should only ensure that the specified thresholds of Section 15.321(c)(2) and (c)(7) are not exceeded by more than 3 dB. (A12-A13)
- Section 14.319(f) should be clarified to ensure that "listen-before-talk" is required before sending control and signaling information. (A15)

Power Limits: The measurement of peak power in Section 15.303(f) is inconsistent with the definition in Section 15.319(c); this should be remedied by amending Section 15.303(f) to specify peak power output measure over an interval of time equal to the transmission burst of the device under all conditions of modulation. (A13)

Acknowledgement Rules: The "8-hour" acknowledgement rules in Section 15.321(c)(3) should be modified to require an acknowledgement every 10 seconds to ensure that spectrum is not tied up inefficiently. (A14)

Other: Clarification of the device interference protection safeguards in Section 15.307(d) and (e) is necessary; the FCC should specify what UTAM is required to submit to comply with (d); what manufacturers are required to submit to comply with (e); and whether disabling the entire system or just the ability to transmit is sufficient. (A15-A16)

LACE, INC./CHANDOS A. RYPINSKI

Interest: Chandos Rypinski is President of LACE, Inc. LACE, Inc. is not described.

Band Plan:

- As a general principle, the FCC should minimize regulatory fixed partitioning of available spectrum space for a system or service. (2)
- The temporary problem caused by a light/heavy populated band does not justify creating a 20 MHz and a 10+10 MHz band division. (2-3)
- If a choice is inevitable between the isochronous and asynchronous devices for the 1910-1930 MHz band, the asynchronous technologies are more deserving of the new technology incubation advantage, since voice technologies currently exist and data technologies do not. (3)

Channelization and Access Rules: Channelization for the isochronous band should be eliminated entirely or increased to the highest acceptable value, such as 2.5 MHz. (3-4)

Other: Because participants in industry-standards groups are trying to ensure their ability to deploy existing technologies, the Commission should respond by protecting new technologies and avoiding predefining existing technology as the only answer. (4-5)

METRICOM, INC.

Interest: Manufacturer of spread spectrum Part 15 devices.

Packing Rule: Section 15.323(b) precludes the use of frequency-hopping spread spectrum systems since it mandates predetermined search patterns. (5-6)

Power Limits: To achieve the "any time, any place" potential of Data-PCS, the FCC must increase the power limits to allow adequate building penetration for regional, rather than in-building, systems and eliminate the emission bandwidth minimum of 500 kHz. (4-5)

- Providers should be allowed to utilize up to the power limitations in Section 15.247 or limits specified in ANSI/IEEE C95.1-1992, whichever is lower. (7)
- Even though higher power limits are requested, still supports use of automatic power control on a link-by-link basis. (8)

Transmission Time: The limitation of transmission bursts to no more than 10 ms is excessive and should be revised to accord with Section 15.247. (6)

RF Exposure: Requests reconsideration of the determination that all Data-PCS devices operate in an "uncontrolled" environment, since some transmitters will not operate near any users. (8)

Other:

- Requests clarification of the term "intraburst" in Section 15.323(g). (6-7)
- The benefits of the existing Part 15 limits in Section 15.247 have been proven. (9-10)

MOTOROLA INC.

Interest: Equipment manufacturer.

Channelization and Access Rules: The channelization of the 1890-1990 MHz isochronous band in Section 15.321(a) should be revised from 2x5 MHz to 8x1.25 MHz, since it prevents a single transmitter from monopolizing significant segments of spectrum; it allows co-existence of several different systems and technologies in the same band; it enhances overall spectrum efficiency by reducing the spectrum occupancy of systems with low traffic requirements; and, it prevents control and signaling information from monopolizing up to 5 MHz of spectrum even though there are no communications links active. (11-13)

Duplex Devices: Proposes a new Section 15.321(c)(10) that would allow a duplex mobile device to respond in the time/frequency window selected by a base station for duplex technologies. (15)

Packing Rule: The "packing" rule in Section 15.321(b) should be deleted since it compromises coexistence with incumbent OFS users, increases interference between sub-bands, increases interference between licensed and unlicensed bands, and increases the potential interference between isochronous devices by preventing random channel selection. (13)

Channel Monitoring Rules:

- Recommends modification of Sections 15.321(c)(8) and 15.323(c)(6) to delete the ± 3 dB accuracy requirement; specifically suggests leaving it to manufacturers as to how to meet an absolute maximum received power deference threshold. (15)
- The 1 second maximum transmission length for unacknowledged messages in Section 15.321(c)(4) should be extended to 30 seconds to accommodate a greater number of technologies. (14)

Acknowledgement Rules: Section 15.321(c)(4) should be amended, since it now inefficiently allows devices to continue transmitting unacknowledged messages for up to 8 hours. (14)